

Observations on the CTBT and Nonproliferation

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Observations on the CTBT and Nonproliferation

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Roundtable Discussion on the CTBT
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The CTBT sits in a broad national security context. The stated purpose of the treaty is to ban nuclear testing and thereby slow nuclear proliferation. However, it also heightens issues of concern for U.S. national security related to stockpile stewardship, worldwide monitoring, and the status of other countries' nuclear weapons programs.

These issues were recognized during the negotiation of the CTBT and articulated, in August 1995, as the set of safeguards under which the U.S. would be willing to sign a CTBT. Safeguards A, B, C, and F address maintenance of the U.S. nuclear stockpile, Safeguard D addresses improved monitoring capabilities, and Safeguard E addresses the need to be knowledgeable about foreign nuclear programs.

Stockpile Stewardship

Ensuring the safety and reliability of nuclear weapons without nuclear testing is a technical challenge of unprecedented proportions. We are faced with the need to find a replacement for a testing program that, for fifty years, has proven to be the most technically efficacious and cost-effective means of developing and certifying nuclear weapons and of training the people responsible for ensuring the safety and reliability of the stockpile.

Much progress has been made in implementing science-based stockpile stewardship. The directors of the national security laboratories have been able to certify the U.S. nuclear stockpile as safe and reliable, without the need for nuclear testing, for the fourth consecutive year. However, the program is neither fully implemented nor proven. Annual shortfalls in planned budgets have been compounded by an unexpected increase in the number of stockpile surveillance findings that must be resolved and by a workload considerably greater than the program's original projection.

Of particular concern is the need to recruit and train the next generation of stockpile stewards before our experienced weapons scientists leave the program or retire. The work environment that has developed over the past year and a half has made it difficult not only to attract new scientists and engineers to the labs but also to retain experienced personnel. Long-term commitment to the Stockpile Stewardship Program—and to the people who are the heart of the program—is vital.

Monitoring and Verification

The ability to detect, locate, and identify nuclear explosions in any environment is a fundamental element of U.S. national monitoring capabilities. The technical objectives for monitoring a CTBT are specified in presidential decision directives. Major enhancements to existing U.S. national technical means must be made in order to meet these objectives. Despite the clearly defined need for these enhancements, funding for monitoring R&D has eroded over the past few years.

The International Monitoring System is being established per the CTBT Protocol. However, this extensive system of monitoring stations, together with its International Data Center, will not be fully operational until 2005 at the earliest. In addition, although the international system will augment U.S. national technical means, it is not designed to monitor at the thresholds specified in the U.S. presidential directives.

Even with the planned enhancements to U.S. national technical means and the international capabilities in place, strict zero-yield monitoring is not technically feasible. At some yield level, monitoring assets will not be able to detect, locate, and identify a nuclear explosion with high confidence. The significance of undetected tests will vary depending on the identity of the party conducting the test—weapons state, threshold state, or other country of concern.

Knowledge about Foreign Weapons Programs

National self-interest dictates whether or not countries attempt to acquire nuclear weapons, with different factors driving the national security policies of different countries. Therefore, CTBT or not, we must be knowledgeable about the nuclear directions and actions of other states. For countries willing to settle for crude devices or to rely on sophisticated computer technology, nuclear tests may not even be necessary.

We cannot assume that the U.S. approach to stockpile stewardship under a CTBT will be the same approach adopted by weapons states. Likewise we cannot assume that other countries will practice similar restraint with regard to continued weapons development and evasive testing. These uncertainties lie at the heart of the safeguard calling for accurate and comprehensive information on worldwide nuclear arsenals, nuclear weapons development programs, and related nuclear programs.

Conclusion

The CTBT is but one element of a larger nonproliferation and national security strategy. The only nuclear-weapons-related activity it directly prohibits is nuclear testing. The treaty has, at various times, been held up as a necessary step toward the elimination of all nuclear weapons, as a way to prevent the proliferation of nuclear weapons, and as a means of freezing the development of nuclear weapons technology. Even as the debate continues, the U.S. must tackle the nuclear proliferation problem on other fronts as well,

including controls on the export of sensitive technology, information, and nuclear materials, while fully implementing and supporting the CTBT safeguards.

Independent of any treaty, the U.S. must continually assess the adequacy of its nuclear deterrent and its monitoring and intelligence capabilities. As the safeguards currently stand, only Safeguard F specifically requires periodic review and assessment. Given the recent pace of technological and geopolitical change, we must assume that there will be significant developments affecting U.S. national security over the next five to ten years. It would perhaps be prudent to consider strengthening Safeguards A through E to ensure that the nonproliferation benefits of the cessation of nuclear testing, with or without the CTBT, do not unacceptably jeopardize other critical aspects of national security.

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